

WHAT IS CLAIMED IS:

1. A wireless communication system comprising:
 - a plurality of radio base stations operable to transmit communication signals to mobile units within the wireless communication system and to receive communication signals from the mobile units, wherein the radio base stations are linearly coupled; and
 - a base station controller operable to transmit communication signals between said plurality of radio base stations and an external communication system, wherein the base station controller is coupled to a first radio base station of said plurality of radio base stations to establish a first communication channel, and further wherein the base station controller is coupled to a second radio base station of said plurality of radio base stations to establish a second communication channel.
2. The wireless communication system of claim 1, wherein at least one of said plurality of radio base stations is coupled to and between the first and second radio base stations.
3. The wireless communication system of claim 1, wherein the base station controller is coupled to the first and second radio base stations via a wired or wireless communication network.
4. The wireless communication system of claim 3, wherein the wired communication network is a SONET.
5. The wireless communication system of claim 4, wherein the SONET comprises at least one bi-directional ring.

6. The wireless communication system of claim 5, wherein said at least one bi-directional ring includes a plurality of bi-directional rings that are interconnected.

7. The wireless communication system of claim 1 further comprising a mobile switching center coupled to the base station controller, said mobile switching being operable to transmit communication signals between the external communication system and the base station controller.

8. The wireless communication system of claim 1, wherein the base station controller uses the second communication channel to receive communication signals from at least one radio base station of said plurality of radio base stations and to transmit communication signals received from the external communication system to said at least one radio base station.

9. The wireless communication system of claim 8, wherein the base station controller uses the first communication channel to receive communication signals from said at least one radio base station and to transmit communication signals received from the external communication system to said at least one radio base station when the base station controller detects that there is a failure associated with the second communication channel.

10. The wireless communication system of claim 8, wherein the base station controller uses the first communication channel to receive communication signals from the first radio base station and to transmit communication signals received from the external communication system to the first radio base station.

11. The wireless communication system of claim 10, wherein the base station controller uses the first communication channel to receive communication signals from said at least one radio base station and to transmit communication signals received from the external communication system to said at least one radio base station when the base station controller detects that there is a failure associated with the second communication channel.

12. The wireless communication system of claim 11, wherein the first radio base station and said at least one radio base station have an air interface capacity to support wireless communications between the first radio base station and said at least one radio base station and the mobile units, and further wherein each of the first radio base station and said at least one radio base station has a backhaul capacity to support a percentage of the air interface capacity.

13. The wireless communication system of claim 1, wherein said plurality of radio base stations have an air interface capacity to support wireless communications between the mobile units and said plurality of radio base stations, and further wherein each of said plurality of radio base stations has a backhaul capacity to support a percentage of the air interface capacity.

14. The wireless communication system of claim 13, wherein the percentage is between 30% and 100%.

15. The wireless communication system of claim 1, wherein communication signals include voice signals, data signals or voice and data signals.

16. A wireless communication system comprising:

a first radio base station operable to transmit communication signals to mobile units within the wireless communication system and to receive communication signals from the mobile units;

a plurality of radio base stations operable to transmit communication signals to mobile units within the wireless communication system and to receive communication signals from the mobile units, wherein said plurality of radio base stations are linearly coupled; and

a base station controller operable to transmit communication signals between the first radio base station and said plurality of radio base stations and an external communication system, wherein the base station controller is coupled to the first radio base station to establish a first communication channel and to a second radio base station of said plurality of radio base stations to establish a second communication channel, and further wherein the first radio base station is coupled to a third radio base station of said plurality of radio base stations.

17. The wireless communication system of claim 16, wherein at least one of said plurality of radio base stations is coupled to and between the first and second radio base stations.

18. The wireless communication system of claim 16 further comprising at least one radio base station coupled to and between the first and third radio base stations.

19. The wireless communication system of claim 16 further comprising at least one radio base station coupled to and between the second and third radio base stations.

20. The wireless communication system of claim 16, wherein the second radio base station and the third radio base station are the same radio base station.
21. The wireless communication system of claim 16, wherein the base station controller is coupled to the first and second radio base stations via a wired or wireless communication network.
22. The wireless communication system of claim 21, wherein the wired communication network is a SONET.
23. The wireless communication system of claim 22, wherein the SONET comprises at least one bi-directional ring.
24. The wireless communication system of claim 23, wherein said at least one bi-directional ring includes a plurality of bi-directional rings that are interconnected.
25. The wireless communication system of claim 16 further comprising a mobile switching center coupled to the base station controller, said mobile switching being operable to transmit communication signals between the external communication system and the base station controller.
26. The wireless communication system of claim 16, wherein the base station controller uses the second communication channel to receive communication signals from the second and third

radio base stations and to transmit communication signals received from the external communication system to the second and third radio base stations.

27. The wireless communication system of claim 26, wherein the base station controller uses the first communication channel to receive communication signals from the second and third radio base stations and to transmit communication signals received from the external communication system to the second and third radio base stations when the base station controller detects that there is a failure associated with the second communication channel.

28. The wireless communication system of claim 26, wherein the base station controller uses the first communication channel to receive communication signals from the first radio base station and to transmit communication signals received from the external communication system to the first radio base station.

29. The wireless communication system of claim 28, wherein the base station controller uses the first communication channel to receive communication signals from the second and third radio base stations and transmits communication signals received from the external communication system to the second and third radio base stations when the base station controller detects that there is a failure associated with the second communication channel.

30. The wireless communication system of claim 29, wherein the first, second and third radio base stations have an air interface capacity to support wireless communications between the mobile units and the first, second and third radio base stations, and further wherein each of the

first, second and third radio base stations has a backhaul capacity to support a percentage of the air interface capacity.

31. The wireless communication system of claim 14, wherein the first radio base station and said plurality of radio base stations have an air interface capacity to support wireless communications between the mobile units and the first radio base station and said plurality of radio base stations, and further wherein each of the first radio base station and said at least one radio base station has a backhaul capacity to support a percentage of the air interface capacity.

32. The wireless communication system of claim 31, wherein the percentage is between 30% and 100%.

33. The wireless communication system of claim 14, wherein communication signals include voice signals, data signals or voice and data signals.

34. A method of configuring a wireless communication system comprising:
providing a plurality of radio base stations operable to transmit communication signals to mobile units within the wireless communication system and to receive communication signals from the mobile units;

linearly coupling said plurality of radio base stations;

providing a base station controller operable to transmit communication signals between the radio base stations and an external communication system;

coupling the base station controller to a first radio base station of said plurality of radio base stations to establish a first communication channel; and

coupling the base station controller to a second radio base station of said plurality of radio base stations to establish a second communication channel.

35. The method of claim 34 further comprising coupling at least one of said plurality of radio base stations to and between the first and second radio base stations.

36. The method of claim 34 further comprising coupling a wired or wireless communication network to and between the base station controller and the first and second radio base stations.

37. The method of claim 36, wherein the wired communication network is a SONET.

38. The method of claim 34 further comprising:
providing a mobile switching center operable to transmit communication signals between the external communication system and the base station controller; and
coupling the mobile switching center to the base station controller.

39. The method of claim 34 further comprising using the second communication channel to receive communication signals from at least one radio base station of said plurality of radio base stations and to transmit communication signals received from the external communication system to said at least one radio base station.

40. The method of claim 39 further comprising using the first communication channel to receive communication signals from said at least one radio base station and to transmit communication signals received from the external communication system to said at least one

radio base station when the base station controller detects that there is a failure associated with the first communication channel.

41. The method of claim 39 further comprising using the first communication channel to receive communication signals from the first radio base station and to transmit communication signals received from the external communication system to the first radio base station.

42. The method of claim 41 further comprising using the first communication channel to receive communication signals from said at least one radio base station and to transmit communication signals received from the external communication system to said at least one radio base station via the second communication channel when the base station controller detects that there is a failure associated with the first communication channel.

43. The method of claim 42, wherein the first radio base station and said at least one radio base station have an air interface capacity to support wireless communications between the first radio base station and said at least one radio base station and the mobile units, and further wherein each of the first radio base station and said at least one radio base station has a backhaul capacity to support a percentage of the air interface capacity.

44. The method of claim 34, wherein said plurality of radio base stations have an air interface capacity to support wireless communications between the mobile units and said plurality of radio base stations, and further wherein each of said plurality of radio base stations has a backhaul capacity to support a percentage of the air interface capacity.

45. The method of claim 44, wherein the percentage is between 30% and 100%.
46. The method of claim 34, wherein communication signals include voice signals, data signals or voice and data signals.